

CLAIMS

We hereby claim:

1. A vibratory pump comprising:
 - a) a housing;
 - b) a vibration generating mechanism disposed within the housing;
 - c) a pumping chamber disposed within the housing adjacent the vibration
5 generating mechanism, the pumping chamber including at least one fluid inlet and a
fluid outlet each extending through the housing; and
 - d) a rod operably connected to the vibration generating mechanism at one end
and positioned within the pumping chamber at the opposite end, the opposite end
selectively engageable with the fluid outlet during operation of the vibration
10 generating mechanism.
2. The pump of claim 1 wherein the fluid outlet includes an outlet chamber having an
inner end positioned within the housing and including a central opening, and an outer end
extending outwardly from the housing.
3. The pump of claim 2 wherein the central opening has a conical surface.
4. The pump of claim 3 wherein the rod includes a plate opposite the vibration
generating mechanism that is matable with the central opening.
5. The pump of claim 4 wherein the plate is formed of a resilient material.
6. The pump of claim 2 wherein the inner end includes a resilient diaphragm positioned
over the central opening, the gasket including a central aperture.
7. The pump of claim 2 wherein the rod includes a plate opposite the vibration
generating mechanism that is engageable with the central opening.
8. The pump of claim 7 wherein the plate is positioned within the outlet end.

9. The pump of claim 7 wherein the plate includes a central portion having a diameter less than the diameter of the central opening and an outer portion having a diameter greater than the diameter of the central opening.

10. The pump of claim 9 wherein the outer portion includes a sealing member that is sealingly engageable with the inner end of the outlet chamber.

11. The pump of claim 1 wherein the at least one fluid inlet includes at least one inlet tube that extends outwardly from the housing.

12. The pump of claim 11 wherein the at least one inlet tube is formed from a generally resilient material.

13. The pump of claim 11 wherein the at least one fluid inlet includes at least one fluid opening in the pumping chamber aligned with the at least one inlet tube.

14. The pump of claim 11 wherein the housing includes an engagement member disposed on the housing that is engageable with a fluid-holding container.

15. The pump of claim 14 wherein the engagement is threaded.

16. The pump of claim 1 wherein the vibration generating mechanism includes a switch extending through the housing.

17. A vibratory pump comprising:

a) a housing;

b) a vibration generating mechanism disposed within the housing;

c) a pumping chamber disposed within the housing adjacent the vibration generating mechanism, the pumping chamber including a fluid inlet and a fluid outlet, each extending through the housing;

d) a plunger operably connected to the vibration generating mechanism at one end and positioned within the pumping chamber at the opposite end, the opposite end selectively engageable with the fluid outlet during operation of the vibration

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10 generating mechanism; wherein the outlet end includes an outlet chamber having an inner end positioned within the housing spaced from the fluid inlet and including a central opening, and an outer end extending outwardly from the housing; and further wherein the pumping chamber includes an inlet tube that extends outwardly from the fluid inlet.

18. The pump of claim 17 wherein the inner end includes a resilient gasket positioned over the central opening, the gasket including a central aperture.

19. The pump of claim 18 wherein the plunger includes a plate opposite the vibration generating mechanism that is matable with the central aperture in the resilient gasket.

20. A pumping mechanism for a vibratory pump comprising:

a) an enclosure having a fluid inlet, the fluid inlet including an inlet tube extending outwardly from the enclosure, and a fluid outlet, the fluid outlet including an inner end within the enclosure and an outer end extending through the enclosure;
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b) a rod connectable to a vibration generating mechanism and including a plate disposed within the chamber that is engageable with the inner end of the fluid outlet